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JONATHAN Y. KANG, ESQ.
LEE, HONG, DEGERMAN, KANG & SCHMADEKA
14th Floor
801 S. Figueroa Street
Los Angeles, CA 90017

EXAMINER

MANOHARAN, MUTHUSWAMY GANAPATHY

ART UNIT PAPER NUMBER

2617

DATE MAILED: 06/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/724,383

Applicant(s)

WON, CHANG-BAI

Examiner

Muthuswamy G. Manoharan

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date | 6) <input type="checkbox"/> Other: _____ |

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The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 2617.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jung (US 5697124) in view of Cooke (US 6148480).

Regarding **claim 1**, Jung teaches a mobile communication terminal comprising: a first body (Figure 1); a second body (figure 1); and a hinge apparatus, which rotatively couples the first body to the second body, the hinge apparatus comprising (Figure 5): a first hinge unit (item 40 of Figure 5); a second hinge unit (item 70 of figure 5); a coupling hinge member disposed between the first and second hinge units (item 50 of Figure 5). Jung did not teach specifically a rotation control device. However, Cooke teaches in an analogous art a rotation control device (item 28 in Figure 1). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to have the rotation control device so that opening and pressing a push button can perform closing operations.

Claim 1-5,8,16-18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katoh (US 20010053674) in view of Cooke (US 6148480).

Regarding **claim 1**, Katoh teaches a mobile communication terminal comprising: a first body; a second body (items 2 and 3 in figure 1); and a hinge apparatus, which rotatively couples the first body to the second body, the hinge apparatus comprising (Figure 1): a first hinge unit (item 2b in Figure 1); a second hinge unit (item 3b in Figure 1); a coupling hinge member disposed between the first and second hinge units (item 11 of Figure 5). Jung did not teach specifically a rotation control device. However, Nakase teaches in an analogous art a rotation control device (item 28 in Figure 1). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to have the rotation control device so that opening and pressing a push button can perform closing operations.

Regarding **claim 2**, Katoh teaches the mobile communication terminal of claim 1, wherein the first hinge unit comprises: a first hinge housing formed approximate to a side edge of the first body; and a first hinge member inserted into the first hinge housing (Figure 1).

Regarding **claim 3**, Katoh teaches the mobile communication terminal of claim 2, wherein the second hinge unit comprises: a second hinge housing formed approximate to a bottom edge of the second body (Figure 1); a second hinge member inserted into the second hinge housing (item 3b in Figure 1); and a spring disposed adjacent to the second hinge member in the second hinge housing (item 14 in Figure 4).

Regarding **claim 4**, Katoh teaches the mobile communication terminal of claim 3, further comprising a shaft disposed in the second hinge housing, wherein the shaft passes through the spring, second hinge member and coupling hinge member (item 6 in Figures 3 and 4).

Regarding **claim 5**, Katoh teaches the mobile communication terminal of claim 2, wherein guiding surfaces are formed on opposing surfaces of the first hinge member and coupling hinge member (Figures 3 and 4).

Regarding **claim 8**, Katoh teaches the mobile communication terminal of claim 3, wherein a convex portion and a concave portion are each formed on opposing surfaces of the coupling hinge member and the second hinge member such that the convex and concave portions of the coupling hinge member correspond to the concave and convex portions, respectively, of the second hinge member (Figures 3 and 4).

Regarding **claim 16**, Katoh teaches the mobile communication terminal of claim 1, wherein a plurality of terminal manipulation devices is disposed on an inner surface of the first body (item 2 in Figure 1).

Regarding **claim 17**, Katoh teaches the mobile communication terminal of claim 1, wherein a display screen is disposed on an inner surface of the second body (figure 1).

Regarding **claim 18**, Katoh teaches a folding type mobile communication terminal, wherein a hinge apparatus rotatively couples a first body to a second body, the hinge apparatus comprising (Figures 1 and 2): a first hinge housing formed

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approximate to a side edge of the first body (item 2b in Figure 2); a first hinge member inserted into the first hinge housing (item 2b in Figure 1); a second hinge housing formed approximate to a bottom edge of the second body (Figures 2 and 1); a second hinge member inserted into the second hinge housing (Figures 1 and 2); a coupling hinge member disposed between the first and second hinge members (items 10,11 and 11a in Figure 3); a spring disposed adjacent to the second hinge member in the second hinge housing (item 14 in Figure 3); a shaft disposed in the second hinge housing, wherein the shaft passes through the spring, second hinge member and coupling hinge member (item 6,6a,6b in figure 3). Katoh did not teach specifically a rotation control device. However, Nakase teaches in an analogous art a rotation control device (item 28 in Figure 1). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to have the rotation control device so that opening and pressing a push button can perform closing operations.

Claim 20 is rejected for the same reason as set forth in claim 8.

Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katoh (US 20010053674) in view of Cooke (US 6148480) and further in view of Applicant's prior art (hereinafter AP) (US 2004/0110546).

Regarding **claim 6**, Katoh in view of Cooke teaches all the particulars of the claim except wherein a groove, which is formed on the guiding surface of the first hinge member, engages a corresponding protrusion formed on the guiding surface of the

coupling hinge member. AP teaches in an analogous art, wherein groove, which is formed on the guiding surface of the first hinge member, engages a corresponding protrusion formed on the guiding surface of the coupling hinge member (Figure 5B). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to have a groove, which is formed on the guiding surface of the first hinge member, engages a corresponding protrusion formed on the guiding surface of the coupling hinge member. This modification helps to maintain the position of the lid at any desired angle.

Claim 7 is rejected for the same reason as set forth in claim 6. It is a design choice, since one can have the grove on the surface of either the first hinge member or the coupling hinge member and the protrusion on the other.

Claim 19 is rejected for the same reason as set forth in claim 6.

Claims 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's prior art (hereinafter AP) (US 2004/0110546) in view of Furuta et al. (hereinafter Furuta) (US 5467477).

Regarding **claim 23**, PA teaches a method of unfolding a folding type mobile communication terminal to a maximum opening angle, the method comprising the steps of: lifting a first body of the terminal, which is rotatively coupled to a second body, so that a convex portion of the coupling hinge member passes over a convex portion of a second hinge member; and releasing the first body of the terminal so that a spring housed in a second hinge housing expands and forces the convex portion of the

coupling hinge member to completely pass over the convex portion of the second hinge member, thereby completely unfolding the terminal. PA did not teach expressly the method comprising the steps of: rotating a rotation control device in a predetermined direction so that a first hinge member is forced towards an outer edge of the terminal, wherein a coupling hinge member is displaced into a first hinge housing (Paragraph [0007-0008]). However, Furuta teaches in an analogous art, wherein the method comprising the steps of: rotating a rotation control device in a predetermined direction so that a first hinge member is forced towards an outer edge of the terminal, wherein a coupling hinge member is displaced into a first hinge housing (Col. 2, lines 50-65, Col. 3, lines 1-9; Col. 4, lines 46-57). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use the method comprising the steps of: rotating a rotation control device in a predetermined direction so that a first hinge member is forced towards an outer edge of the terminal, wherein a coupling hinge member is displaced into a first hinge housing. This modification helps in controlling the axial force by the thread, which engages into a threaded hole.

Regarding **claim 24**, PA teaches a method of unfolding a folding type mobile communication terminal to a desired opening angle, the method comprising the steps of lifting a first body of the terminal, which is rotatively coupled to a second body, so that a protrusion on the coupling hinge member engages a groove on the first hinge member; and releasing the first body of the terminal at the desired opening angle, wherein an elastic force generated by a spring housed in a second hinge housing

presses the coupling hinge member against the first hinge member, thereby creating a frictional force to maintain the desired opening angle (Paragraphs [0009-00010]).

However, Furuta teaches in an analogous art, wherein the method comprising the steps of: rotating a rotation control device in a predetermined direction so that a first hinge member is forced towards an outer edge of the terminal, wherein a coupling hinge member is displaced into a first hinge housing (Col. 2, lines 50-65, Col. 3, lines 1-9; Col. 4, lines 46-57). Therefore, it would be obvious to one of ordinary skill in the art at the time of invention to use the method comprising the steps of: rotating a rotation control device in a predetermined direction so that a first hinge member is forced towards an outer edge of the terminal, wherein a coupling hinge member is displaced into a first hinge housing. This modification helps in controlling the axial force by the thread, which engages into a threaded hole.

Allowable Subject Matter

Claims 9-15 and 21-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Muthuswamy G. Manoharan whose telephone number is 571-272-5515. The examiner can normally be reached on 7:30AM-4: 30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid can be reached on 571-272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



LESTER G. KINCAID
SUPERVISORY PRIMARY EXAMINER